

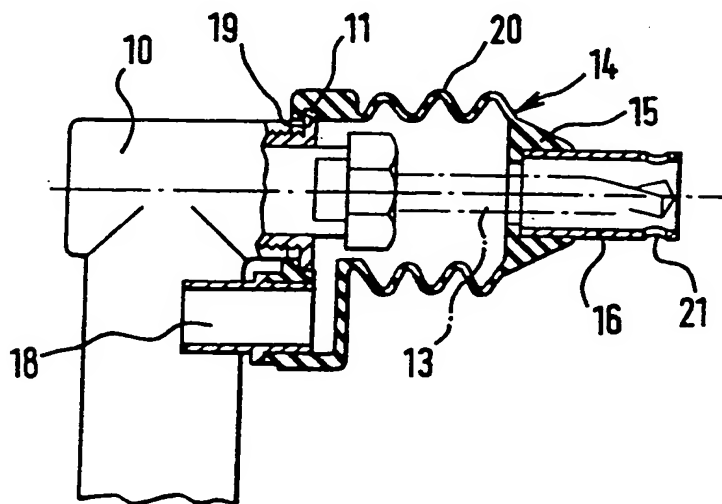
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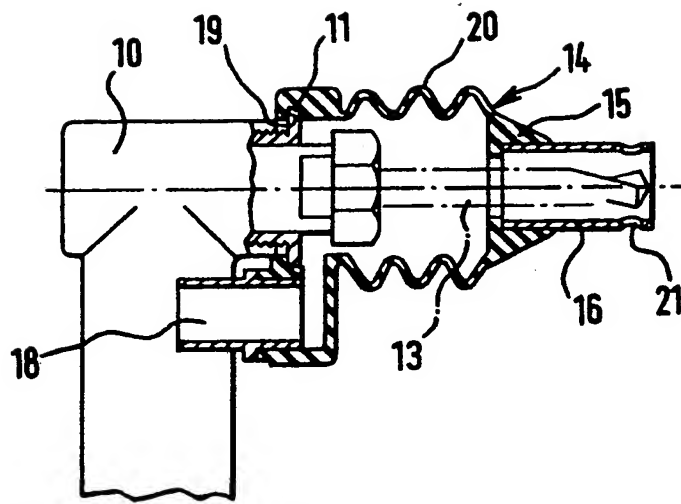
(54) Power drilling tool with dust
extractor duct

(57) The tool has a dust extraction
ducting comprising a transparent
sleeve (16) which surrounds the free
end of the drill bit (13). A flexible

shroud (14) is connected to the
drilling tool and carries the
transparent sleeve at its front end. The
shroud has a compressible portion
(20) and carries a tube 18 which can
be connected to a flexible hose
coupling to a vacuum source.



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SPECIFICATION

A power tool

This invention relates to a power drilling tool.

- 5 Dust is produced when some materials are drilled and this dust may be damaging to the health of an operator.

It is an object of this invention to provide a power drilling tool with means for extracting any dust produced.

- 10 To this end, the invention provides a power drilling tool provided with dust extraction ducting comprising a transparent sleeve for surrounding the free end of a drill bit, in use, mounted in the tool, a flexible shroud connected to the drilling tool and carrying the transparent sleeve, the shroud being compressible in a direction away from the free end of the bit, and means for communicating the interior of the shroud with a vacuum source.

- 20 With such a tool, the drill bit will be visible to an operator through the transparent sleeve and therefore, it should not be difficult to sight and drill holes in positions marked on the workpiece.

Preferred features of the invention are set forth in claims 2—7.

- 25 The feature of claim 6 allows the shroud to be turned to a position which allows access to be gained where it is necessary to drill holes close to *inter alia* corners.

- 30 The invention will now be more particularly described with reference to the accompanying drawing which shows one embodiment of a tool according to the invention, partly in section.

- Referring now to the drawing, the power drilling tool shown therein is of the right angle type but it may be any other form of power drilling tool such as one with a cylindrical handle coextensive with the body of the tool. The body of the tool is designated reference numeral 10 and this has at its front end an annular, radially outwardly extending flange 11 set back from a drill bit holder 12. The holder is driven by a motor, such as an electric or pneumatic motor mounted in the body of the tool.

- 45 A drill bit is shown in broken lines and designated reference numeral 13.

- A generally tubular shroud 14 is fixed at its rear end to the tool body 10 in a manner to be described hereinafter. At its front end, the shroud 14 has a head portion 15 having a through aperture therein which is stepped adjacent to its rear end to define larger and smaller diameter portions leading to the front and rear ends, respectively, thereof. The shroud may be of rubber or resilient plastics material. A transparent sleeve 50 16 conveniently of plastics material is mounted in the larger diameter end of this aperture so as to surround the front end of the drill bit 13 and extend coaxially therewith. The shroud also has intermediate its ends a flexible portion 20 of convoluted section. This portion 20 will compress as the drill proceeds into a workpiece. The spring effect of this portion 20 will ensure that the transparent sleeve 16 is returned towards its starting position as the drill is withdrawn from the

- 65 workpiece.

- At the rear end, the shroud has a radial extension 17 which supports a rearwardly extending tube 18 which communicates with the interior of the shroud. The tube 18 is supported so as to be parallel to the axis of the drill but offset radially therefrom. When the drill is used to drill material, such as carbon fibre or glass fibre, which produces dust, a flexible tube coupled to a vacuum source is pushed over the rear end of the tube 18.

- 70 The shroud has an annular groove 19 adjacent to its rear end for receiving the outer edge of the flange 11. With such an arrangement, the shroud is angularly movable relative to the tool body so as to displace the tube 18, when necessary, into a position which will allow access to be gained to drill holes close to, *inter alia* corners.

- The transparent sleeve 16 enables an operator to site and drill holes in positions marked on the workpiece. One or more apertures 21 are provided in the sleeve 16 adjacent to its forward end so that, when the interior of the shroud is connected to a vacuum source, air is drawn through the sleeve and shroud and any dust generated during the drilling operation will be conveyed away from the drilling area.

- 90 The shroud complete with the transparent sleeve is removable to facilitate the removal of and the changing of the drill bit. To remove, the top of the shroud is peeled away from the flange 11 on the drill body and the assembly of the shroud, sleeve 16 and tube 18 is then pulled off.

CLAIMS

1. A power drilling tool provided with dust extraction ducting comprising a transparent sleeve 100 for surrounding the free end of a drill bit, in use, mounted in the tool, a flexible shroud connected to the drilling tool and carrying the transparent sleeve, the shroud being compressible in a direction away from the free end of the bit, and means for communicating the interior of the shroud with a vacuum source.

2. The tool of claim 1, wherein the shroud is in part of convoluted section.

3. The tool of claim 1 or claim 2, wherein the communicating means comprises a tube carried by the shroud for connection to a flexible hose communicatable with the vacuum source.

4. The tool of claim 3, wherein the tube extends parallel to the transparent sleeve and is offset laterally from the axis of the sleeve.

5. The tool of claim 4, wherein the transparent sleeve is carried by the front end of the shroud and the tube is carried by the rear end of the shroud.

6. The tool of any one of the preceding claims, wherein the shroud is connected to the tool so as to be angularly movable relative to the tool about the axis of a drill bit.

7. The tool of any one of the preceding claims, wherein the transparent sleeve has one or more apertures therein.

8. A power driven drilling tool, substantially as hereinbefore described with reference to, and as shown in, the accompanying drawing.

New claims or amendments to claims filed on
17/6/83

Superseded claims 1—8

New or amended claims:—

- 5 1. A power drilling tool having a tool body housing a motor and supporting a drill bit holder for rotation by the motor, and dust extraction ducting mounted on the tool body and comprising a transparent sleeve for surrounding the free end
- 10 of a drill bit, in use, mounted in the tool holder, a flexible shroud carrying the transparent sleeve, the shroud being compressible in a direction away from the free end of the bit and towards the tool body, and means for communicating the interior of
- 15 the shroud with a vacuum source.
2. The tool of claim 1, wherein the shroud is in part of convoluted section.
3. The tool of claim 1 or claim 2, wherein the

communicating means comprises a tube carried
20 by the shroud for connection to a flexible hose communicatable with the vacuum source.

4. The tool of claim 3, wherein the tube extends parallel to the transparent sleeve and is offset laterally from the axis of the sleeve.

25 5. The tool of claim 4, wherein the transparent sleeve is carried by the front end of the shroud and the tube is carried by the rear end of the shroud.

6. The tool of any one of the preceding claims, wherein the shroud is connected to the tool body
30 so as to be angularly movable relative to the tool body about the axis of a drill bit.

7. The tool of any one of the preceding claims, wherein the transparent sleeve has one or more apertures therein.

35 8. A power driven drilling tool, substantially as hereinbefore described with reference to, and as shown in, the accompanying drawing.